

An inaugural dissertation
 On
 Hydrocephalus Internus

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It has not been more, than half a
century, since Hydrocephalus Internus, was
known, as a distinct disease: The Ancients
had, but a very imperfect notion of it
Hippocrates in his work "de morbis"
speaks of a collection of water in the brain,
and has enumerated some, of the Signs
of its appearance, but his knowledge
respecting it appears, to have been extremely
limited.

Hieronymus Mercurialis in his Opuscula aurea,
says, that such a thing, as a collection of
water in the brain may happen, but
declares, that in such a case Apoplexy
must be the consequence: Other ancient
authors have spoken of the disease, but their
accounts, are equally vague, and unsatisfactory.

It is a pity that we are in danger
for the first time at the same time the first
commence history of the disease, which was
prevalent.
Although some light has been thrown
upon the disease, it is not yet
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persons of a more advanced age; Cases of this kind, are related by different authors:

* Quin mentions several instances, where it attacked grown persons.

Children of almost every age, are subject to this disease; it most generally occurs from the 2^d to the 10th year - Dr Rush saw a case, where it affected a child of 6 weeks old; here it was preceded by the Cholera Infantum.

Hydrocephalus Internus Cannot be considered, as an hereditary disease; yet there appears to be a peculiarity in the constitution, which predisposes several children of the same family to be affected with it.

This is what has been termed the Cephalic temperament, and it has been observed, that children, in whom this peculiarity exists, are remarkable for their vivacity, and cheerfulness.

In addition to this, children predisposed

Hydrocephalus
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to Hydrocephalus, have an unusual transparency of the skin, particularly about the temples, forehead, and neck; the eyes, are full, prominent, and brilliant, and resemble in several respects children liable to Scrophulous disease, when observed in its commencement is marked by most of the following symptoms. The patient is at first generally languid, and inactive; there is loss of appetite, nausea, and frequently a vomiting occurs, once, or twice a day.

The child frequently manifests a disposition for reclining on a sofa, chair, or lap of the mother; is often peevish, and fretful, but at intervals cheerful, and to all appearances free from the complaint.

The tongue is observed, to be white; there is occasional thirst, and towards evening the skin is hot and dry.

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Not long after the appearance of these
Symptoms a sharp head-ache supervenes;
Sometimes in the forehead, but generally
in the crown of the head: it frequently
however affects the side of the head; if
this is the case when the patient is erect the
head inclines to the side affected.

This Symptom is frequently observed to alternate
with the affections of the stomach; the
vomiting being less troublesome, when the
pain is most violent, and vice versa.

The bowels at this time, are obstinately
costive; and when evacuations are
obtained, they are dark, and of a
very disagreeable smell.

The patient cannot bear the light, and
complains when a lighted candle is
brought before his eyes; sleeps little,
and when he does, he grinds his

death, frowns,
slow, screaming
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After a few
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teeth; frowns, picks his nose; and starts
up, screaming, as if he were terrified.
The pulse at this time is somewhat accelerated.

After a few days continuance, all the
symptoms above mentioned, are very much
aggravated: the vomiting becomes more
constant, the head-ach more excruciating,
and every symptom of fever makes its
appearance: the pulse is frequent, and
the breathing quick; exacerbations of the
fever take place towards evening, and
there is a flushing of the face; generally
one cheek is more affected, than the
other.

The system at this time frequently makes
an ineffectual effort, to relieve itself
by some temporary evacuations, either
by perspiration, or bleeding at the nose.

the patient is in a state of
fever, and the pulse is
small and rapid. The
respiration is quick and
superficial. The patient
is restless and complains
of pain in the chest and
head. The tongue is
furred and the throat
is inflamed. The
stomach is empty and
the bowels are constipated.
The patient is in a
state of great anxiety
and the pulse is
small and rapid. The
respiration is quick and
superficial. The patient
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of pain in the chest and
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After continuing in this state for some time, subject however to great variations, the disease throws off its mask, and is exhibited in all its terrors, by ushering in a train of symptoms, which by, Whitt has been called its second stage. *

Here the pulse becomes slow, and unequal; the pain in the head subsides, but the heat of surface is unabated: the restlessness, and interrupted slumbers, which prevailed during the early period of the disease, are now succeeded by an almost lethargic torpor; Stasis, and dilatation of the pupils come on; the patient lies, with one, or both eyes half closed; they are insensible to the light, and are observed to be turned in towards the nose.

The hands remain obstinately cold, and the

* Cheyne, who has written a very excellent treatise on this subject calls the 1st stage that of increased sensibility. the 2^d that of debilitated sensibility & the 3^d the convulsed stage.

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the breath is now, but particularly in the last stage very offensive.

If the disease is suffered to run on uninterrupted other symptoms appear, which but too clearly announce the speedy approach of death.

The pulse now becomes regular, but so very weak, and quick, as scarcely to be counted; the patient is drowsy and comatose, there is a difficulty of breathing, and when aroused he utters incoherent words, and appears to be insensible.

Frequently before death the tunica-conjunctiva becomes suffused with blood; the flushings of the face, are more frequent, followed by a deadly paleness, respiration becomes more laborious, deglutition more difficult; subattus tendinum, and convulsions close the scene.

To prove, that a uniformity in the occurrence of the above symptoms cannot be expected, and that we must look for frequent deviations from the history of the disease, which has been given, I shall cite the authority of several writers.

* Dr Rush mentions one case, where the appetite was unimpaired from the first, to the last stage of the disease, and one, in which no preternatural sweats, or intermission, was ever perceived in the pulse.

† Dr Ruin mentions a case, where the jaws of the child, were firmly locked a day before death, and one, where hemiplegia occurred, attended with some remarkable circumstances.

As it is of importance, to distinguish Hydrocephalus, from some other

* Rush's works Vol 3 p 321-2

† Ruin's treatise p 121-2

The first of these is a rapidity in the
 occurrence of the above symptoms, and
 is especially so in that we must look
 for frequent variation from the habit
 of the disease, which has been
 I shall not the tendency of disease
 to be more or less frequent
 I think the disease can be seen where the
 patient is an invalid, and from the
 first to the last stage of the disease
 and last, in looking at the symptoms
 the course of the disease, and the
 progress in the body.
 The first symptom to be seen, and the
 loss of the child, was simply taken
 a day before death, and the other
 symptoms being slowly increasing with
 some temporary remissions.
 It is of importance to distinguish
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Analogous affections of children; and as upon an early attention to this circumstance, a successful treatment of the disease very much depends; I shall say a few words on the diagnosis.

Hydrocephalus Internus may be distinguished from fever depending upon dentition, or worms (to which it has a resemblance in many respects) by the strange alteration of voice, and sometimes an entire loss of speech, which attends the latter affection, and also by a spasmodic twisting of the limbs, which does not appear untill near the close of Hydrocephalus. We should never observe the aversion to light, sharp pain in the head, sudden screams, heat of the surface, Vomiting; and Costiveness, without suspecting Hydrocephalus; More

Development of children, and
in these the early attention to the
circumstances of development, and
the disease very much depends upon
the position of the child.
The position of the child may be changed
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especially, when it is known, that
children of the same family have
been affected, with this disease.

In the more advanced stage of the
complaint, when we see strabismus,
dilatation of the pupils, stupor, and
blindness, we can be no longer
ignorant, as to its nature.

Concerning the causes of this disease,
not a little diversity of opinion has
been entertained; by different authors—
Whytt, and some of the other European
writers supposed it to depend upon a
serous condition of the blood; ruptured
lymphatic, Cachexy &c

These notions, however popular, they
may have been at the time they
were promulgated, are now very
discreedily laid aside; and phlogistic

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after a more enlarged experience, and
closer observation, have agreed, to refer
the disease, to causes, which produce an
increased, and altered action of the
vessels of the brain:

These causes may act, either directly on
the brain itself, or upon it through
the intervention of the general system;
of the former, are falls, blows, and
certain childish plays: these, are comparatively
of rare occurrence, and some authors
have doubted, whether they, are ever
instrumental in producing the disease.

The causes, which act indirectly on the
brain, are certain diseases of the
whole system, such as, Small pox,
Measles, and Scarlatina *

But by far the most frequent cause, of
the disease, is a disordered condition of

* Rush's works Vol 1 p 223
also 2^d ed in the Med. Journal

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the digestive organs; together with some of the neighbouring viscera, and more particularly the liver, producing a morbid impression upon the brain, by means of their sympathetic connections.

Taking into view the wide influence, which these organs possess over the whole system, but more especially the brain, we cannot be at a loss in accounting for all the symptoms, which mark the appearance, and progress of Hydrocephalus. Whatever may have been the difference among practitioners, as regards the pathology of this disease, it is now universally conceded, to be in its commencement an inflammatory affection, and is to be treated by all those remedies calculated, to subdue inflammation. Of the correctness, of this opinion, I do
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Not think there can be the slightest doubt, the symptoms, which characterized the origin, and progress of the Complaint; together, with the appearances, which have been revealed to us by dissections, are all so many proofs, of an inflammatory action in the brain.

In the treatment of Hydrocephalus, much depends upon attacking the symptoms at an early period of the Complaint; therefore, when we are assured of its existence, no time should be lost, in resorting to those remedies best calculated, to break the force of the disease before, it is completely formed.

For this purpose Trepanation, is unquestionably the proper remedy; we must be regulated in its employment, by the age, Constitution, and Violence of the existing

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and progress of the complaint together
with the appearance which has been
recorded to us by observation, and
to these progress of the inflammation
in the brain.

The treatment of this affection
must depend upon attending to
symptoms at an early period of the
inflammation, before we are obliged
of its extent, the time should be lost
in waiting to show whether the disease
to break the force of the disease before
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The first purpose of medicine is to remove
the proper remedy, we should be regulated
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If there exist strong marks of inflammatory action, and the patient be of a plethoric constitution, we must bleed pretty freely, and repeat the operation, so long, as the urgency of the case may demand.

Topical depletion by means of cups, and leeches, may be had recourse to, with the greatest advantage; either, when the patient is very young, or too weak, to bear the loss of any considerable quantity of blood, by general bleeding; and where the operation can be performed, with safety, the opening of the temporal artery, has been recommended, as highly beneficial.

This remedy operates in a way exceedingly intelligible to us, by acting more immediately on the part affected, it

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leaves the determination of blood to the head; without drawing too far upon the resources of the general system — It was for this purpose, that Morgagni * recommended free incisions, to be made in the occipital veins; and he relates several cases, where he succeeded, in relieving affections, of the head, in this way.

The next thing, to be attended to, is the state of the alimentary canal: In support of the efficacy of purgative Medicines in Hydrocephalus we have the concurrent testimony, of almost every practitioner. As in this disease the bowels are in a very torpid, and inactive condition; we should employ those Medicines best calculated to arouse them into action, and procure copious alvine discharges; these may be employed without inducing debility,

* Morgagni de Causis & Sedibus Morborum

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On the contrary, with evident acceptions of
strength; so long, as there is foulness, of
the bowels, and the stools of a dark, and
unhealthy appearance.

For the purposes, which have been mentioned
Calomel has been very generally Consecrated.
In addition to its active purgative qualities,
it is recommended, by the facility with which
it is exhibited; being destitute of taste,
or odour, it is taken by children, with
the greatest ease.

Calomel may be employed either alone,
or in combination; Most generally, however
with Jalap V or Vj gr Cal. united with
℞ij or X grs Jalap, may be given to a
child 8 years old, and is a medicine
admirably well calculated, to stimulate
the torpid intestines, and to purge off the
foul, and offensive matter, with which
the bowels are loaded:

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In the more advanced stages of the disease, where there exists in the intestines, an almost insensibility to impression, some of the more drastic articles may be found necessary.

Cooperating to the same end, with the remedies which have been mentioned, are blisters. Although denied by some authors; yet, experience, (an only guide in cases of uncertainty) has fully proved their efficacy; they should be large enough, to cover the whole head, and are to be kept constantly discharging. Blisters most probably act, by diminishing the quantity of circulating fluid, and also, by producing a Counter irritation. Throughout the whole progress, of the first stage of the disease, we should be attentive to keep the patients head constantly elevated, by attending to this circumstance, we will in some measure counteract the Violence, with which, the blood is driven towards

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Bathing the feet in warm water, is a remedy, which has been found, so useful in other affections of the head, that practitioners have been induced, to employ it in Hydrocephalus; and it is said, to be highly beneficial.

These are the remedies, together with a strict adherence, to the antiphlogistic plan in every respect, which have been found most useful, in the inflammatory stage of Hydrocephalus, and if judiciously employed, will not unfrequently effect a cure of the Complaint. But, if, by the means already mentioned, we are unable, to check the farther progress, of the disease, it generally terminates, by producing, an effusion of water into the ventricles, of the brain, or some organic damage in its structure.

When this is the case, I need not say how discouraging becomes the situation, of the patient,

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but even here we should not despair; cases seemingly the most unpromising, have sometimes been cured, by the pursuing Vigorous Measures. In this stage of the disease, the only remedy, which, is entitled, to any degree of confidence, is Mercury; and it has even been a question among Physicians; whether Mercury is ever beneficial in this complaint?

~~Given~~ in minute quantities, it is not surprising, that the remedy should fail, in subduing a very obstinate, and confirmed disease; but when employed, with, a more liberal hand, its good effects, have been frequently apparent.

In Support, of the efficacy, of Mercury in Hydrocephalus, we have the testimony, of the present professor, of the practice in the University, of Pennsylvania; and by no other Physician, has it been, so literally, or so successfully employed.

but even then we should not forget
that the most important part of
the treatment is the diet. The
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When we have determined upon producing
a powerful mercurial impregnation, the medicine
should be employed in very large quantities
after giving it internally, as much as the
stomach and bowels will bear; we should
then resort to mercurial frictions diligently
applied, with the strongest ointment.

In addition to this mercurial plaisters
should be applied, to the head, and
other parts of the body, and the Clusters
should be dressed, with mercurial ointment.

It is, by pursuing this course alone, that
mercury can be, of any service, in this
stage of Hydrocephalus, and we will
sometimes effect a cure, as unexpected,
to ourselves, as gratifying, to the friends,
of the patient. o

